

Work Order ID 62838

Friday, October 08, 2010 2:52:55 PM



Page 1

Item ID: D205-634-041

Accept



Setup Start



Revision ID:

Item Name: Replacement Skidtube

Stop



Start Date: 10/8/2010 Start Qty: 1.00



Cust Item ID:

Required Date: 10/27/2010 Req'd Qty: 1.00



Customer:

Reference:

Approvals: Process Plan:



Date: 10-8

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

Draw Nbr	Revision Nbr
D2580	Rev D

100



DOCUMENT CONTROL

DC

Document Control

Memo

0.00

Photocopy D205-634 bluefile & type labels per PPP D205-634-041 CHG002

N/A 2 10/11/03 HJ

110



BENDING MACHINE - SKIDTUBES

0.00

Memo

0.00

1-Bend as per program D2580.C on CNC Bender and Folio 16

CNC Bend 1
CNC Delta 100 Bender

2-Cut tubes as per Dwg. D2580

10-10-19

3-scribe batch# in aft end of tube

DD 10-10-19

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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QC: _____

Date: _____

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QtyReject
QtyReject
NumberInsp.
Stamp

120



Skidtubes

Memo

0.00

B10/10/20

Skidtubes

1- Deburr ends and remove marks bending marks
2- C'sink holes as per dwg without cutting fluid
3- Prepare tube for welding, remove alodine as required.

130



QC5- Inspect part completeness to step on W/O

0.00

V B10/10/20

QC

Memo

0.00

Quality Control

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Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop

Sequence ID/
Work Center ID

140

Operation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

Skidtubes

Skidtubes

0.00

Memo

0.00

1-Weld step D2576 as per Dwg. D2580 and QSI 004
A/R□□□ Aluminum Rod

m15778

BE 10/10/20

2-Prep per QSI 005 and weld crossbolt spacers D2579 as per Dwg. D2580, QSI 004.

For D2579 spacers, weld one side, pass 3/8" drill, weld other side, pass 3/8" drill

A/R□□□ Aluminum Rod

m15778

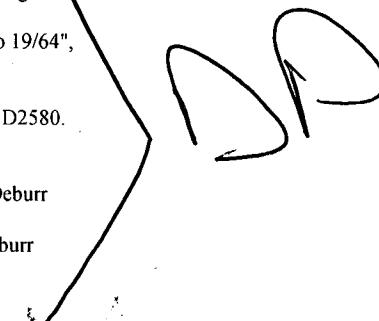
BE 10/10/20

3-Grind welds as per Dwg D2580 Grind flush ridge made from bending

4-Drill holes for wearplates using DT 8217 & DT8937 Open holes to 19/64",
adjust stopper not to hit web. Deburr5-Counterbore crossbolt spacers to 7/16" ID x 1.0" deep as per Dwg D2580.
Deburr holes

6-Drill pilot holes for aft cap using DT 8215Open holes to 0.208". Deburr

7-Drill pilot holes for Tow ring using DT8091, open to .640"and Deburr



10-10-21

W/O:		WORK ORDER CHANGES						
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Date:

Tooling:

Date:

Run

Start



QC:

Date:

SPC (Y/N):

Date:

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

150



QC10- Inspect visual per QSI004- ground welds

0.00

1

QC

Quality Control

160



QC5- Inspect part completeness to step on W/O

0.00

1

QC

Quality Control

170



Pressure Wash per QSI005 4.3

0.00

1

HandFinish

Hand Finishing

Memo

0.00

✓ Re-alodine tube as per QSI 005 section 4.1.2.1 do not acid etch and leave fwd cap out of solution.

W/O:		WORK ORDER CHANGES					
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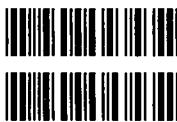
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Date: _____

Run Start



QC: _____

Date: _____

SPC (Y/N): _____

Date: _____

Stop

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Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

180



Powdercoat

White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum

M 115291

0.00

BL 10-10-25.

Powder Coating

Memo

9:15

0.00

①

190



QC

QC3- Inspect Part Finish

0.00

7/11 10/10/24

1 P

Quality Control

Memo

0.00

W/O:		WORK ORDER CHANGES						
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Process Plan:

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Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

200



HandFinish

Hand Finishing

0.00

5 10 10 126

0.00

Memo

1-Install inserts & wearplates & Gaskets as per Dwg. D2580. Use a drop of Sikaflex on insert holes before installing wearplates
A/R Sikaflex-291 M115144
Sikaflex expire date: 11/01

2-Coat D2594-3 O' rings with Petroleum Jelly and install on D2594-1 plugs as per Dwg D2580

3-Inspect for foreign object per QSI 024

4-Install 2855 Aft Cap as per Dwg D2580 and seal Fwd Step & Aft Cap with Sikaflex. Clean excess adhesive

A/R Sikaflex-291 M115144
Sikaflex expire date: 11/01

5-Wing Walk as per Dwg D2580 and QSI 005 4.4
Batch: M115790

W/O:		WORK ORDER CHANGES						
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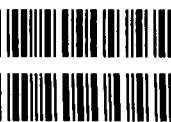
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Tooling: _____

Date: _____

Run Start



QC: _____

Date: _____

SPC (Y/N): _____

Date: _____

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

210



QC

QC5- Inspect part completeness to step on W/O

0.00

S10/10/07

(OK)

Quality Control

Memo

0.00

Inspect Aft Cap, Fwd Step and Wing Walk of work to Current Step Inspect for Foreign objects per QSI 024

220



Packaging

0.00

Packaging

Memo

0.00

Packaging

Identify and pack for shipping as per PPPD205-634-041

Location: _____

PPP Rev: _____

PP 6/984

10/11/07 C

230



QC

QC21- Final Inspection - Work Order Release

0.00

Quality Control

Memo

0.00

OK 10/11/07 H
MF

10-11-3

W/O:		WORK ORDER CHANGES					
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Picklist Print

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Friday, October 08, 2010 2:52:59 PM

Work Order ID: 62838



Parent Item: D205-634-041



Parent Item Name: Replacement Skidtube

Start Date: 10/8/2010

Required Date: 10/27/2010

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP Rev:N 02.08.28 FP was QC5 in Step 27; Added QC5 to Step 30 KJ

IPP Rev P 10.02.19 per PAR09-043 EC verified by:DD

IPP Rev. O 06.02.28 Added paperwork EC

IPP Rev:P 07-07-09 SS Wearplates & Gaskets JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	-------------	--------------	---------------	----------------	--------

D2580-1



Manufactured

No

110

Each

3.0000

1



205 Skidtube bent detail

Location	Loc Qty	Loc Code
LG	2	
62047	1	
62048	1	
ST046	1	
	1	

B62352

①

P 10-10-19

D2576-3



Manufactured

No

140

Each

68.0000

1



Step (machining detail)

Location	Loc Qty	Loc Code
LG	68	
46661	20	
52215	48	

T

BE 10-10-20

W/O:		WORK ORDER CHANGES					
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Parent Item: D205-634-041



Parent Item Name: Replacement Skidtube

Start Date: 10/8/2010

Required Date: 10/27/2010

Start Qty: 1.00

Required Qty: 1.00

D2579



Manufactured No

140

Each

144.0000

20

20



Crossbolt Spacer

Location	Loc Qty	Loc Code
LG	144	
57052	5	
57348	4	
58433	2	
59113	7	
60845	1	
61199	125	

D2855



Manufactured No

200

Each

61.0000



Cap

Location	Loc Qty	Loc Code
FP6	1	
56613	1	
ST026	60	
50513	1	
50770	28	
51539	2	
53791	29	

AN3-5A



Purchased No

200

Each

1,451.000



Bolt

Location	Loc Qty	Loc Code
ST350	1451	
105057	451	X2
115016	500	
115371	500	

W/O:		WORK ORDER CHANGES					
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Required Date: 10/27/2010

Start Qty: 1.00

Required Qty: 1.00

AN960JD10L



NAS1149D0332I Purchased

No

200

Each

0.0000

2

2



x2 M 10/10/26

Washer

ALS7-1032-130



Purchased

No

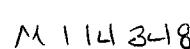
200

Each

1,746.000

50

50



M 114348 10/10/26

Insert

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
FP	729	AAA15911
115079	729	
ST282	1017	
113238	17	
115502	500	
115581	500	

AN3C4A



Purchased

No

200

Each

1,611.000

50

50

M 10/10/26

BOLT

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
ST245	20	
110139	20	
ST303	3	
115438	3	
ST350	1588	
114108	14	
114416	12	
114523	2	
115300	560	
115589	1000	

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Start Qty: 1.00

Required Qty: 1.00

AN960C10L

NAS1149C0332

R

Purchased

No

200

Each

29.0000

50

50

washer

D3566-13



Gasket

Manufactured

No

Location

Loc Qty

Loc Code

ST245

29

107534

29

D3566-5



Gasket

Manufactured

No

200

Each

22.0000

1

1

M 10110126

D3566-1



Gasket

Manufactured

No

200

Each

23.0000

2

2

M 10110126

Location

Loc Qty

Loc Code

FP

10

60869

10

FP015

12

62463

12

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

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Start Date: 10/8/2010

Required Date: 10/27/2010

Start Qty: 1.00

Required Qty: 1.00

D3564-11



Manufactured No

200

Each

14.0000

1

1

HL 10110126

Wearshoe

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
FP019	14	
60302	2	
<u>61708</u>	12	

D3564-13



Manufactured No

200

Each

35.0000

1

1

HL 10110126

Wearshoe

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
FP17	35	
59660	1	
<u>60862</u>	10	
61828	12	
62229	12	

D3564-9



Manufactured No

200

Each

19.0000

1

1

HL 10110126

Wearshoe

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
FP	1	
55334	1	
FP019	18	
60236	5	
<u>61709</u>	13	

W/O:		WORK ORDER CHANGES					
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Start Date: 10/8/2010

Required Date: 10/27/2010

Start Qty: 1.00

Required Qty: 1.00

D3564-5



Manufactured No

200

Each

23.0000

1

1



HL 10110126

Wearshoe

Location	Loc Qty	Loc Code
----------	---------	----------

FG	1	
34806	1	
FP19	8	
57525	1	
58709	1	
<u>61699</u>	6	X1
FP-19	14	
60868	1	
62237	13	

D2594-3



Manufactured No

200

Each

931.0000

16

16



HL 10110126

O-Ring, 205 Skidtube

Location	Loc Qty	Loc Code
----------	---------	----------

FP	43	
55546	19	
58191	12	
59358	12	
fpa	888	
<u>61762</u>	888	V16

W/O:		WORK ORDER CHANGES					
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Start Qty: 1.00

Required Qty: 1.00

D2594-1

Manufactured No

200

Each

267.0000

16

16



10/10/2010

Plug, 205 Skidtube

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
FP	183	
	112	
	71	
FP14	84	
	15	
	69	XV6

W/O:		WORK ORDER CHANGES					
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Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

DART

DESIGN <i>[Signature]</i>	DRAWN BY <i>[Signature]</i>	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED <i>[Signature]</i>	APPROVED <i>[Signature]</i>	DRAWING NO. D2580	REV. D SHEET 1 OF 3
DATE 07.02.27		TITLE 205 SKIDTUBE ASSEMBLY	SCALE NTS
A	96.09.16	NEW ISSUE	
B	96.12.02	AS MANUFACTURED	
C	98.08.26	REDRAWN, INCLUDED DEO 9094/9097	
D	07.02.27	CHANGE TO SS WEARPLATES AND GASKETS, INCLUDE DEO 9124/9183	

RELEASED
07.02.28

QTY -041	QTY -045	Part Number	Description
X		D2580-041	SKIDTUBE ASSEMBLY
	X	D2580-045	SKIDTUBE ASSEMBLY
1	1	D2500-1-190	EXTRUSION
1	1	D2576-3	STEP
20	24	D2579	CROSS BOLT SPACER
16	16	D2594-1	PLUG
16	16	D2594-3	O-RING
1	1	D2596	205 WEB
1	1	D2855	AFT CAP
1	1	D3564-5	WEARSHOE
1	1	D3564-9	WEARSHOE
1	1	D3564-11	WEARSHOE
1	1	D3564-13	WEARSHOE
2	2	D3566-1	GASKET
1	1	D3566-5	GASKET
1	1	D3566-13	GASKET
50	50	ALS7-1032-130 or AKS7-1032-130 or AKS4-1032-130 or AEELS-1032-130	INSERT
50	50	AN3C4A	BOLT
2	2	AN3-5A	BOLT
50	50	AN960C10L	WASHER
2	2	AN960JD10L	WASHER

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12/28/98
JH-008

GENERAL NOTES:

- 1) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 2) ALL DIMENSIONS ARE IN INCHES
- 3) INSERT D2596 WEB TO LOCATION SHOWN OFF AFT END OF SKIDTUBE AND BOND WEB INTO OUTER TUBE WITH NON-STRUCTURAL SIKAFLEX-241 ADHESIVE PER DART QSI 015 BEFORE BENDING. ENSURE HOLES LINE-UP.
- 4) BEND AS A SMOOTH RADIUS STARTING WITH A MAXIMUM CENTERLINE RADIUS OF 60 AND ENDING WITH A MINIMUM RADIUS OF 30. A MAXIMUM REDUCTION OF 0.200 IN DIAMETER IS ALLOWABLE IN THE BENT PORTION OF THE TUBE.
- 5) USE DART DRILL TEMPLATE TD2577-205 TO LOCATE AND DRILL Ø0.297 HOLES FOR WEARSHOE INSERTS. INSTALL ALS7-1032-130 PER SECTION D-D (50 PLACES) AFTER FINISH. INSTALL AN3C4A BOLTS AND AN960C10L WASHERS WITH SIKAFLEX-241/-291.
- 6) WELDING TO BE DONE PER DART QSI 004.
- 7) FINISH:
SEE NOTES ON
PAGE 2 FOR D2580-041 AND
PAGE 3 FOR D2580-045
- 8) INSERT D2594-1 PLUG C/W D2594-3 O-RING IN HOLES MARKED 'P' (BOTH SIDES OF TUBE) AFTER FINISH (16 PLACES).

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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

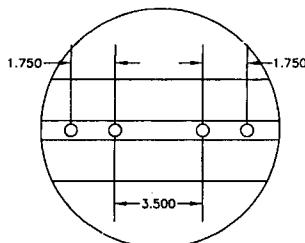
Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____
 Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

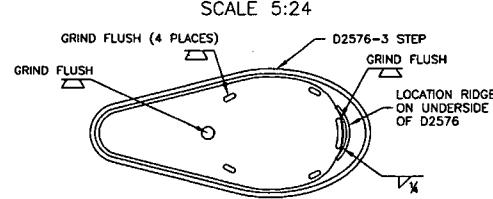
WO 62831

DETAIL A
SCALE 5:24

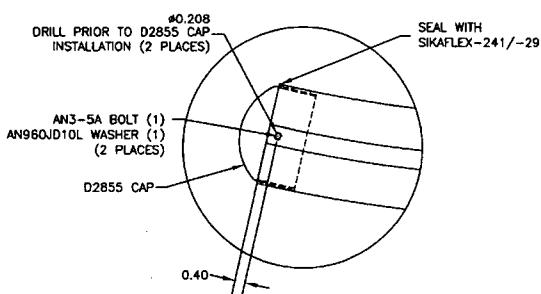


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07-06-28-**1**

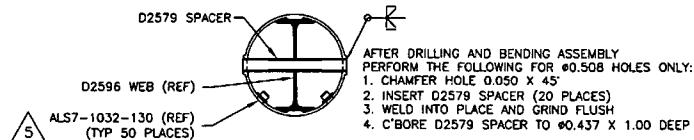
DETAIL B
SCALE 5:24



DETAIL C
SCALE 5:24



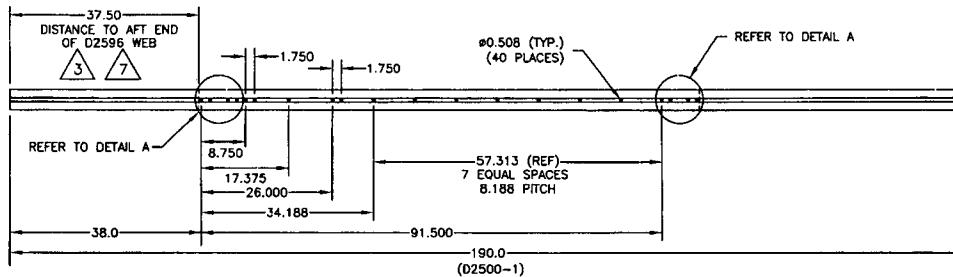
SECTION D-D
SCALE 5:24



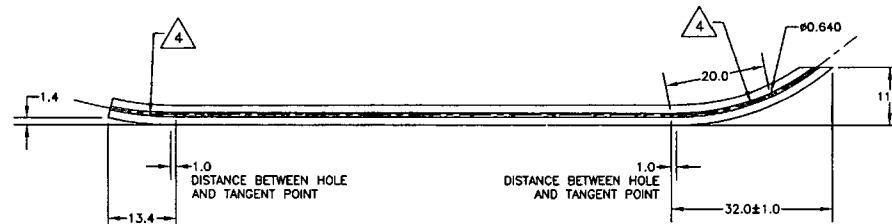
D2580-041 NOTES

i) FINISH: ACID ETCH, ALODINE PER DART QSI 005 4.1 PRIOR TO INSERTING D2596 WEB
POWDER COAT ASSEMBLY GLOSS WHITE (REF. 4.3.5.1) PER DART QSI 005 4.3
BLACK ANTI-SKID PAINT AS INDICATED PER DART QSI 005 4.4

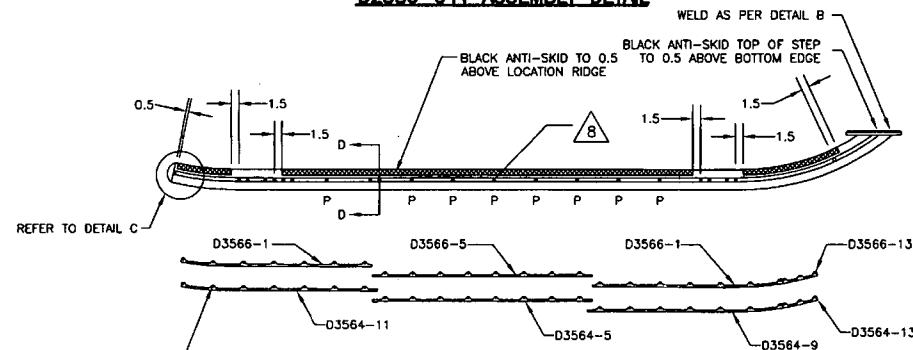
D2580-1 DRILLING DETAIL



D2580-1 BENDING AND CUTTING DETAILS



D2580-041 ASSEMBLY DETAIL



AN3C4A BOLT (1)
AN960C10L WASHER (1)
(50 PLACES)

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		DATE 07.02.27	TITLE 205 SKIDTUBE ASSEMBLY	SCALE 1:24		
		SHEET 2 OF 3				

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

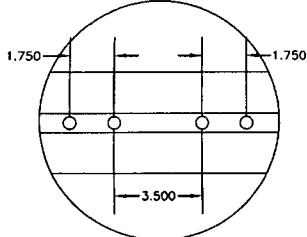
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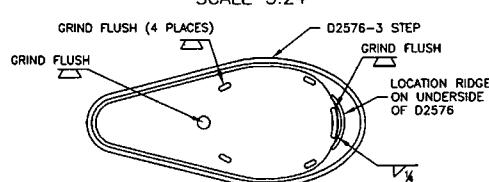
WO 62838

DETAIL E
SCALE 5:24

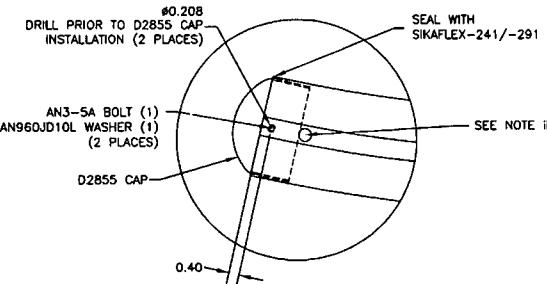


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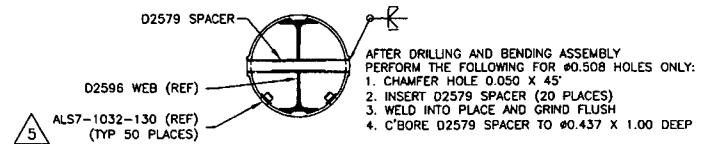
DETAIL F
SCALE 5:24



DETAIL G
SCALE 5:24



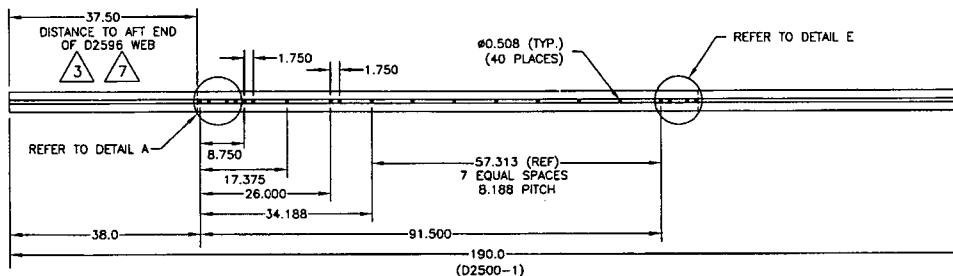
SECTION H-H



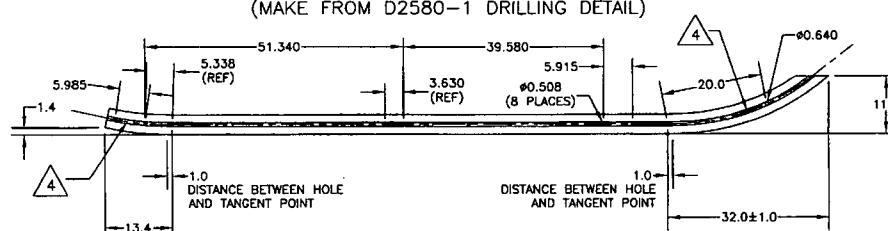
D2580-045 NOTES

- i) FINISH: ACID ETCH, ALODINE PER DART QSI 005 4.1 PRIOR TO INSERTING D2596 WEB POWDER COAT ENTIRE ASSEMBLY GREEN (REF. 4.3.5.8) PER DART QSI 005 4.3 BLACK ANTI-SKID PAINT AS INDICATED PER DART QSI 005 4.4
- ii) IT IS ACCEPTABLE TO GRIND A RELIEF IN THE D2855 AFT CAP TO PREVENT INTERFERENCE WITH THE SPACER AT THIS LOCATION.

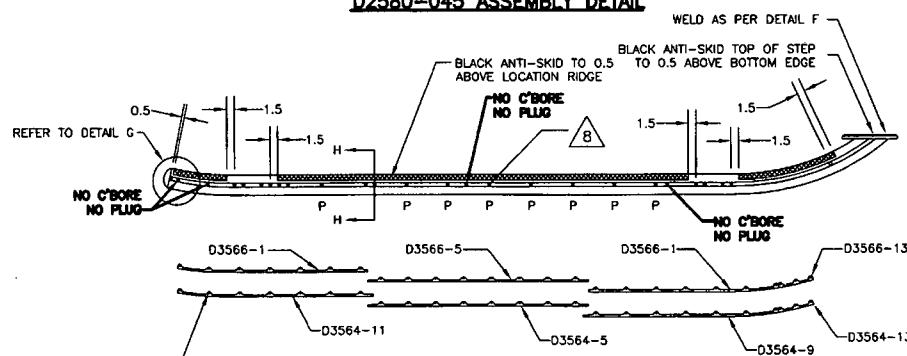
D2580-1 DRILLING DETAIL



D2580-5 BENDING AND CUTTING DETAILS
(MAKE FROM D2580-1 DRILLING DETAILS)



D2580-045 ASSEMBLY DETAIL



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		DATE 07.02.27		TITLE 205 SKIDTUBE ASSEMBLY	SCALE 1:24	

W/O:		WORK ORDER CHANGES					
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